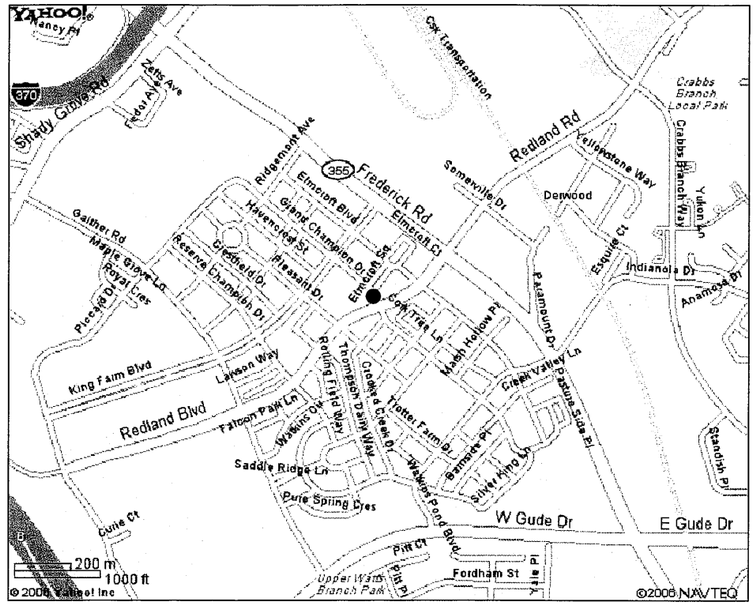
KING FARM BARN
ROCKVILLE, MD
STRUCTURAL UPGRADE



VICINITY MAP

CODE ANALYSIS:
International Building Code 2003 Use Group: B Construction Type: VB

DRAWING LIST:

R0.0	COVER PAGE
R0.1	STRUCTURAL NOTES (PAGE 1 OF 2)
R0.2	STRUCTURAL NOTES (PAGE 2 OF 2)
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R1.1	FOUNDATION PLAN
R1.2	FLOOR PLAN
R1.3	ROOF FRAMING PLAN
R1.4	MACHINERY FLOOR FRAMING PLAN & BRACING PLAN
R2.0	EAST ELEVATION
R2.1	WEST ELEVATION
R2.2	NORTH ELEVATION
R3.0	BUILDING SECTION A–A
R3.1	BUILDING SECTION B–B
R3.2	BUILDING SECTION C–C
R4.0	POLE FOUNDATION DETAIL
R4.1	FRAMING DETAILS
R4.2	FRAMING DETAILS
R5.0	TYPICAL DETAILS

PROJECT DESCRIPTION:

PROPERTY OWNER:
CITY OF ROCKVILLE
111 MARYLAND AVE.
ROCKVILLE MD, 20850

ADDRESS:
GRAND CHAMPION DRIVE
ROCKVILLE, MD

COUNTY: MONTGOMERY
DISTRICT:
TAX MAP:
BLOCK:
SUBDIVISION:
REF.:

SDG# D06046.00

Structural Design Group, Limited
Consulting Structural Engineers
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Project:
KING FARM HAY BARN REHABILITATION FOR STRUCTURAL UPGRADE
Drawing Title:
COVER PAGE
Date: AUGUST 27, 2006 Scale: N.T.S.

R0.0

STRUCTURAL NOTES:

CODE: International Building Code 2003:
Occupancy Group: A Assembly
LIVE LOADS:
- Roof (SNOW)20 psf
- Pg = 25 psf ** Figure 1608.2 **
- Is = 1.0 ** Table 1604.5 **
- Ce = 0.9 ** Table 1608.3.1 **
- Ct = 1.2 ** Table 1608.3.2 **
- Pf = 20 psf ** Pf = 0.7*Pg*Is*Ct*Ce = 18.9psf or 20psf min per Code **

WIND LOAD - Section 1609.0 2003 IBC Code:
- V3s = 90 mph
- I = 1.0 ** ASCE7 Table 6-1 **
- Exposure: B ** ASCE7 Section 6.5.6.3 **
- GCpi = +/-1.07 ** ASCE7 Figure 6-5 **

GENERAL:

1. Provide all labor, material, equipment and miscellaneous items Including but not limited to clips, inserts, ties, anchor straps, hangers, bolts, & other fasteners required to complete the work.
2. Verify all existing dimensions & slopes prior to demolition. Any discrepancy shall be brought to the attention of the Engineer.
3. The contractor shall be solely responsible for site safety, & the stability of all new, temporary, & existing structures, walls, slabs, etc. during the construction phase.

FOUNDATIONS:

1. Foundation Design is based on assumed soil bearing value of "2,000" psf to be verified by geotechnical engineer or qualified soils technician. The structural engineer is not responsible for subsurface conditions encountered in the field different to those assumed for the design.
2. All footings shall project at least 1'-0" into undisturbed natural soil or compacted controlled fill having a bearing value at least equal to that specified above.
3. Bottoms of all exterior footings shall be at least 3'-0" below finished grade or as required by local code requirements.
4. All disturbed earth under footings shall be replaced with lean concrete.
5. All bearing strata shall be adequately drained before foundation concrete is placed.
6. No excavation shall be closer than at a slope of 2:1 (2 horizontal to one vertical) to an existing footing or structure U.O.N.
7. Do not place concrete over frozen soil.

FOUNDATIONS CONT.:

8. Centerline of footing shall match centerline of column, pedestal and/or pier unless shown otherwise.

CONCRETE:

1. All concrete construction including detailing, fabrication, placement of reinforcing, mixing, handling, placing, finishing, & curing shall conform to ACI "Structural Concrete for Buildings" (ACI 301), ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI-315), and "ACI Building Code Requirements for Reinforced Concrete" (ACI-318).
2. All concrete shall conform to ASTM C94. Minimum compressive strength & maximum water/cement ratio shall be as follows:
   - Exterior slabs on grade, exterior footings: 3500 psi (0.50)
3. Maximum aggregate size for regular concrete shall be 1". Aggregate for regular weight concrete shall conform to ASTM C33.
4. All concrete exposed to the weather shall be air entrained with 6% ± 1% air. Slump shall be 4" ± 1".
5. Owner shall retain the services of a qualified testing agency to provide testing of concrete to include compressive strength, temperature, slump and air entrainment.
6. Contractor shall provide concrete mix design data for each type & strength of concrete shown in the structural drawings. The mix design data should include: concrete strength, slump, air entrainment., proposed aggregates, admixtures, and laboratory test data
7. Provide control joints at 15-0" in exterior slab on grade.

REINFORCEMENT STEEL:

1. All reinforcing steel to ASTM-A615, Grade 60.
2. Welded wire mesh to conform to ASTM-A185. and have minimum side and end laps of 8".
3. Fabricate and provide standard supporting accessories in accordance with the ACI Manual of Standard Practice for Detailing Reinforced Concrete Structures ACI 315.

CONCRETE PROTECTION FOR REINFORCEMENT:

Reinforcing bars and mesh to have concrete cover as follows:
- Footings and other concrete poured against earth . . . . . 3"
Slabs on ground to have reinforcement in top third of thickness.

TIMBER FRAMING:

1. Dimensional lumber for posts, beams & joists shall be Douglas Fir South No.2 or or approved equal with the following minimum properties: Fb = 850 psi, E = 1,200,000 psi, Fc = 1350 psi, Fv = 180psi.
2. Framing lumber shall have 19% maximum moisture content.
3. Floor sheathing shall be 3/4" tongue & groove plywood sheathing (or OSB if approved) & shall be glued and screwed to joists or floor trusses no more than 8" O.C. Roof sheathing shall be 1/2" exterior grade plywood sheathing or OSB & shall be attached to rafters or roof trusses with 8d common nails spaced no more than 8" O.C.
4. Wood joists & beams shall not be cut or drilled unless so authorized by the Engineer.
5. Lumber in contact with masonry or concrete shall be pressure treated against decay.
6. All hardware & fasteners for pressure treated lumber shall be stainless steel or triple zinc G-185 galvanized.
7. Provide end sealer & cut beams of all lumber to be utilized below grade or in contact with masonry concrete or grade.
8. All bolts to be ASTM A-307, Hot-Dipped Galvanized or Type 304 stainless steel.

WOOD TRUSSES:

1. Shall be designed to resist anticipated dead loads, live loads & any mechanical equipment loads indicated on the drawings.
2. Trusses shall conform to the "National Design Specifications for Stress Grade Lumber & Its Fastening".
3. Shop drawings including any erection plans & details indicating dimensions, forces, lumber sizes, grades, connector sizes & properties shall be submitted for approval prior to fabrication.
4. Contractor shall adequately brace trusses until sheathing is in place & roof system is stabilized against exterior forces.

SLABS ON GRADE:

1. Except where otherwise noted, shall be 4" thick, reinforced with 6x6 - W1.4xW1.4 (6x6 - $\frac{10}{10}$) W.W.M. Lap mesh 8" in each direction. Slab reinforcement shall be located in top third of slab thickness.
2. Provide control joints at 15'-0" O.C. each way in all slabs on grade. Control joints shall be saw cut within 4 hours after finishing or shall be a prefabricated mechanical joint.

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Drawing Title:
STRUCTURAL NOTES (PAGE 1 OF 3)
Date: AUGUST 27, 2006 Scale: N.T.S.

R0.1

EXISTING CONDITIONS:

1. The drawings may reflect information provided by others and/or existing conditions that have been surveyed and/or documented to the greatest possible extent but not verified. It shall be the Contractor's responsibility to fully coordinate the work, including, but not necessarily limited to, the verification of all existing conditions shown in the drawings, coordination of all necessary building trades, etc. Any and all conditions that are misrepresented in these documents, or any conditions that are not shown but warrant the attention of the Engineer, shall be immediately brought to the attention of the Engineer.

2. Means and methods of construction and temporary shoring and bracing of the existing structure(s) are the sole responsibility of the Contractor. The Engineer may include phasing, sequencing, shoring requirements, etc. in the Construction Documents to alert, assist, or otherwise dictate procedural requirements that may be necessary to properly implement the structural portion of the work or that may be required to insure building stability; however, The Contractor shall properly coordinate these requirements and shall remain completely and solely responsible for erecting the building structure in a safe and timely manner.

DEMOLITION:

1. Refer to sheet RD1.1 for extent of demolition.

2. Contractor shall be responsible for obtaining all necessary permits required to complete the demolition.

3. Contractor shall be responsible for preserving & protecting all work & structure scheduled to remain throughout the construction phase.

4. Coordinate & verify all portions of existing structure to remain w/ owner's representative prior to starting demolition.

5. Field verify all dimensions & existing conditions as noted in drawings prior to starting demolition.

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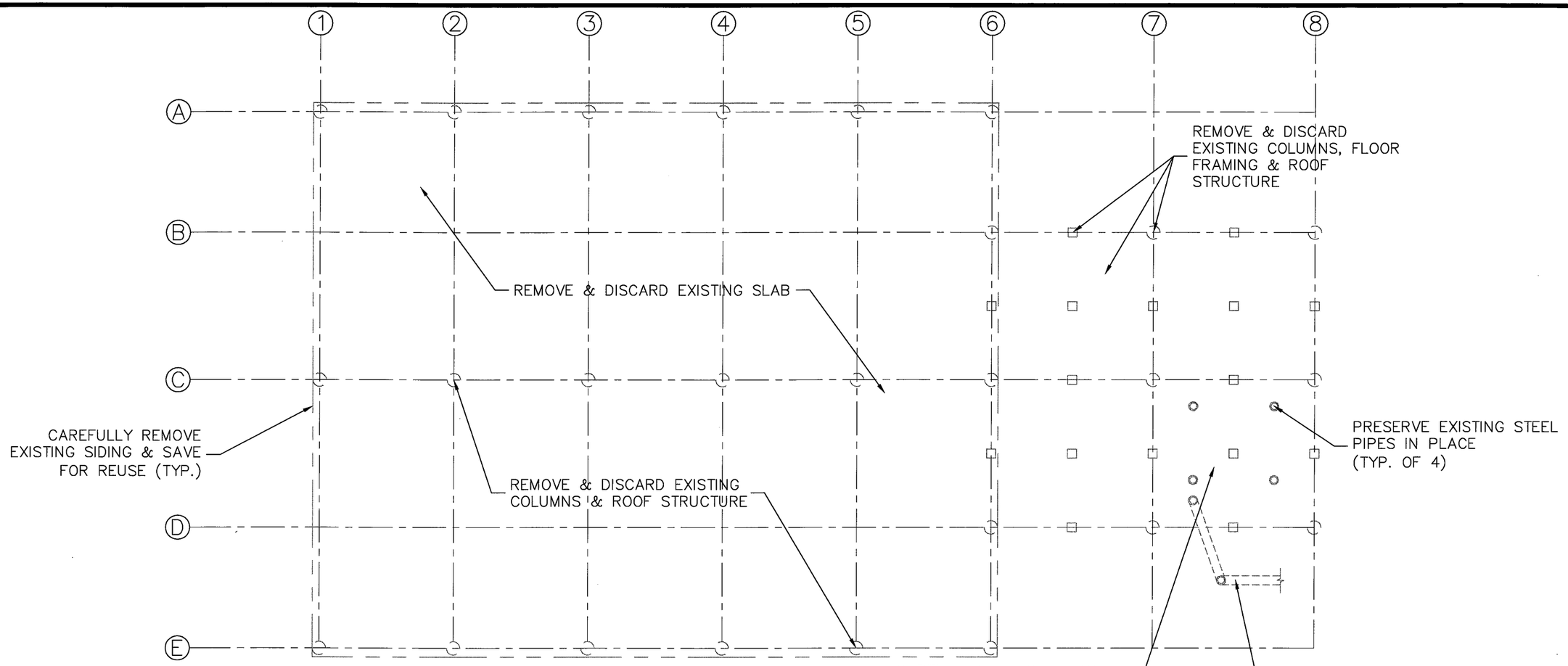
R0.2



1 / RD1.1 DEMOLITION PLAN

Scale: 1/8" = 1'-0"

NOTES:

1. COORDINATE CLEANING & PRESERVATION METHODS & MATERIALS W/ OWNER'S REPRESENTATIVE
2. CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO PRESERVE & PROTECT THE EXISTING SIDING, DOOR & STEEL PIPES AS NOTED TO REMAIN & MACHINERY / EQUIPMENT. COORDINATE W/ OWNER'S REPRESENTATIVE.

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DEMOLITION PLAN
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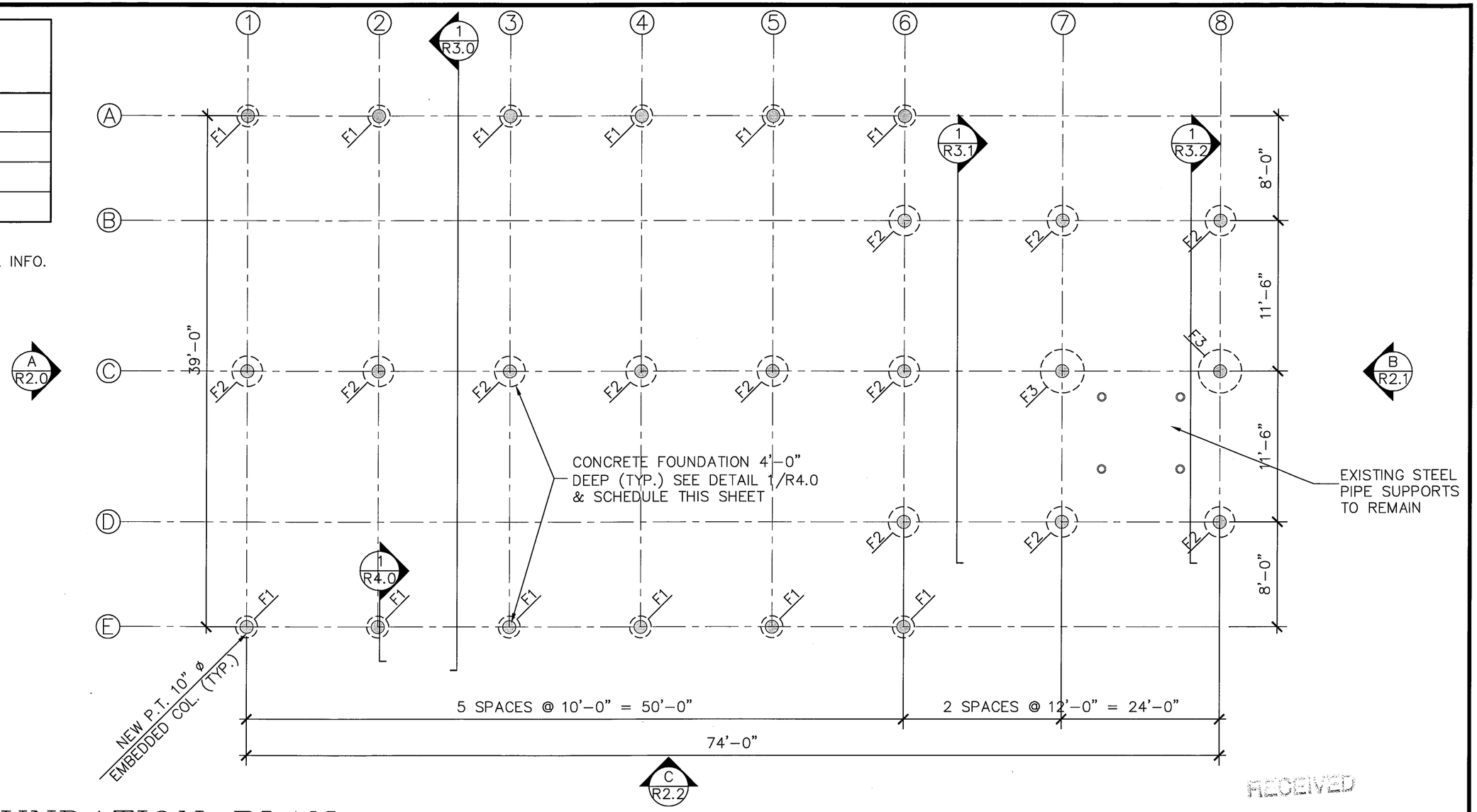
RD1.1

FOUNDATION SCHEDULE	
MARK	Ø
F1	1'–8"
F2	2'–4"
F3	3'–4"

NOTES:
SEE DETAIL 1/R4.0 FOR ADDITIONAL INFO.



A/R1.1 FOUNDATION PLAN

Scale: 1/8" = 1'–0"

NOTES:

1. NEW STRUCTURE FOOTPRINT TO MATCH EXISTING STRUCTURE FOOTPRINT (F.V.)

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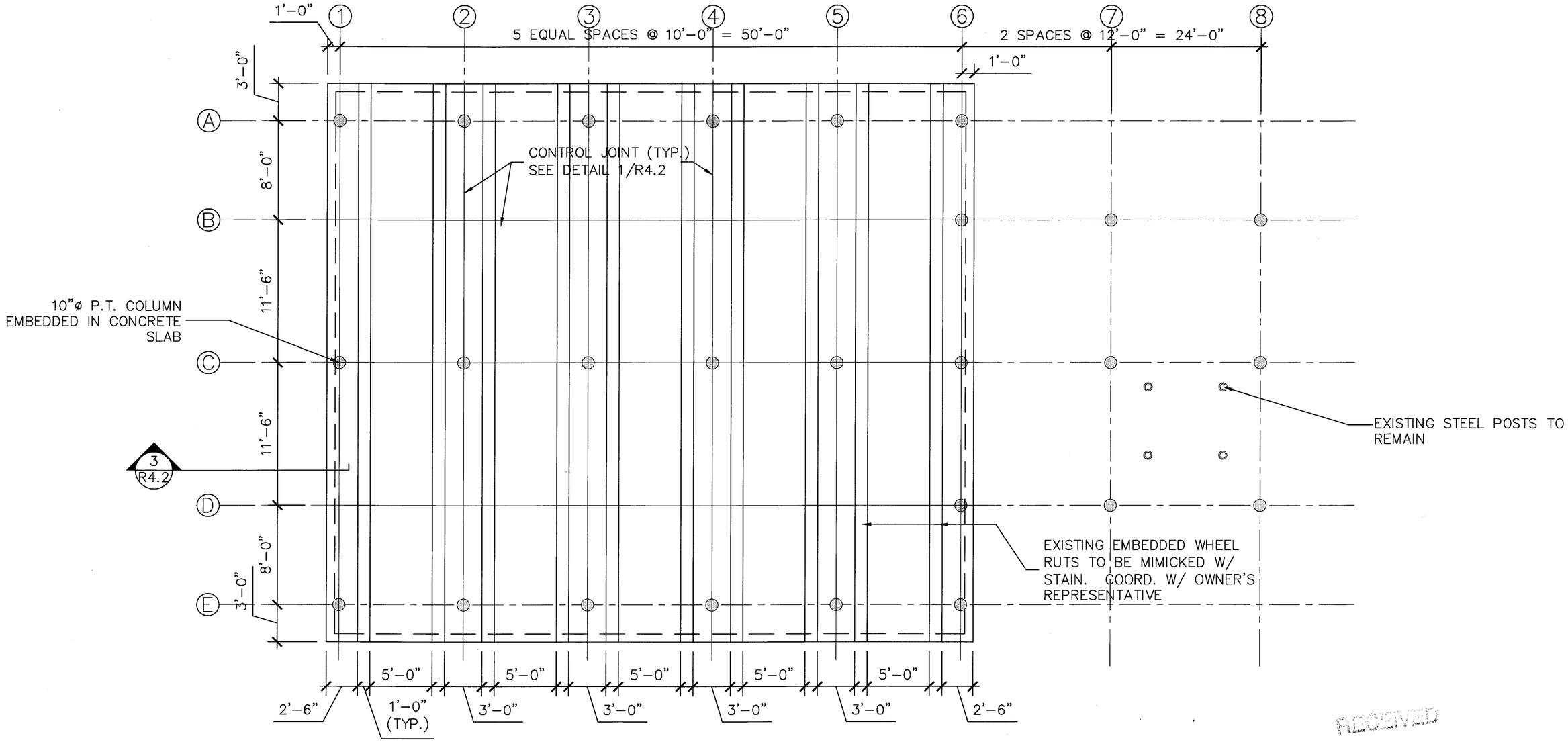
Drawing Title:
FOUNDATION PLAN
Date: AUGUST 27, 2006 Scale: As Noted

R1.1



A / R1.2 FLOOR PLAN

Scale: 1/8" = 1'-0"

NOTES:

1. NEW CONCRETE SLAB SHALL BE 4" THICK REINFORCED W/ 6X6–$\frac{10}{10}$ W.W.M.
2. TOP OF SLAB SHALL MATCH EXISTING ELEVATION. FIELD VERIFY TOP OF EXISTING SLAB PRIOR TO DEMOLITION

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Drawing Title:
FLOOR PLAN
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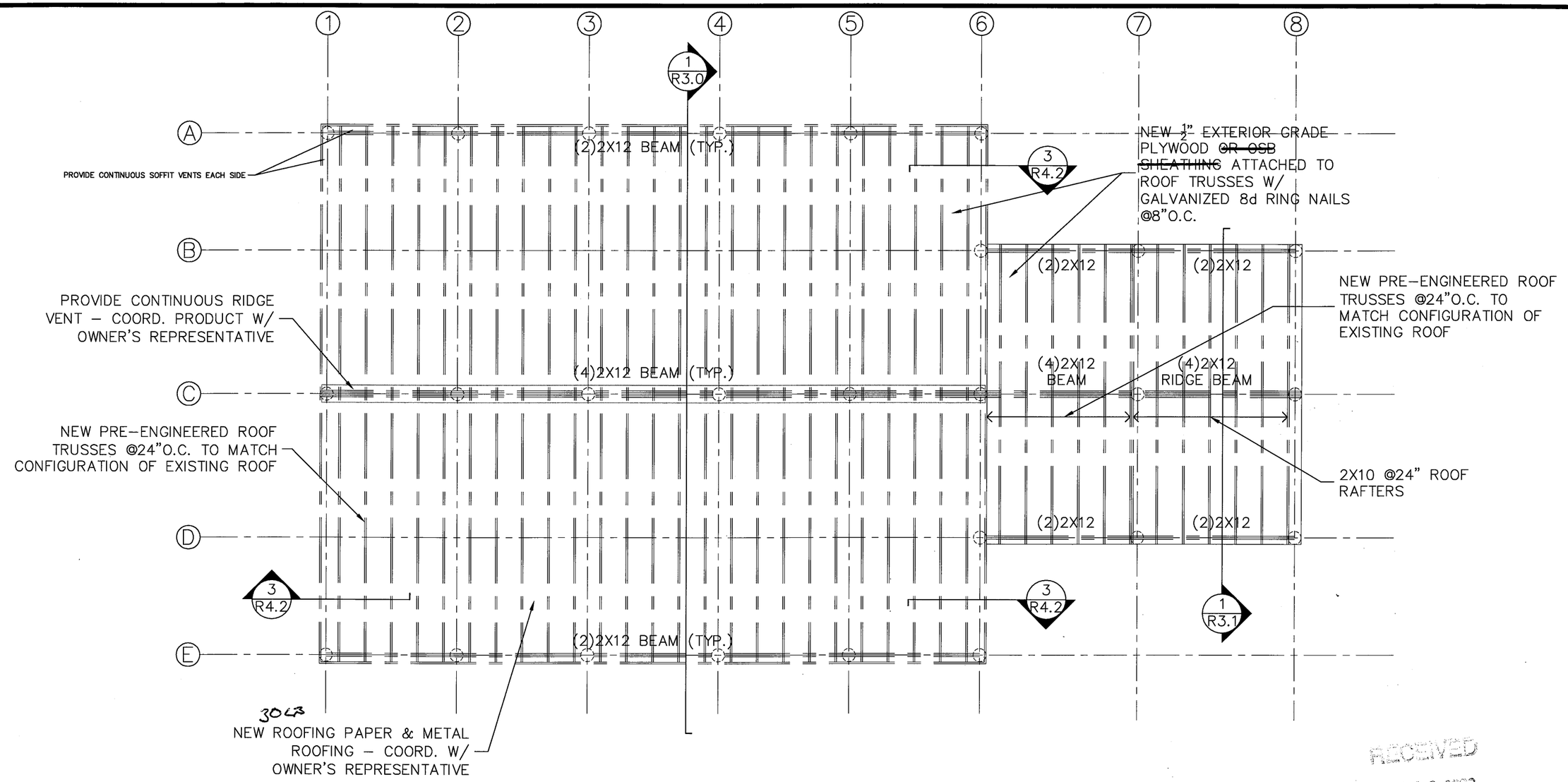
R1.2



A / R1.3 ROOF FRAMING PLAN

Scale: 1/8" = 1'-0"

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Drawing Title:
ROOF FRAMING PLAN
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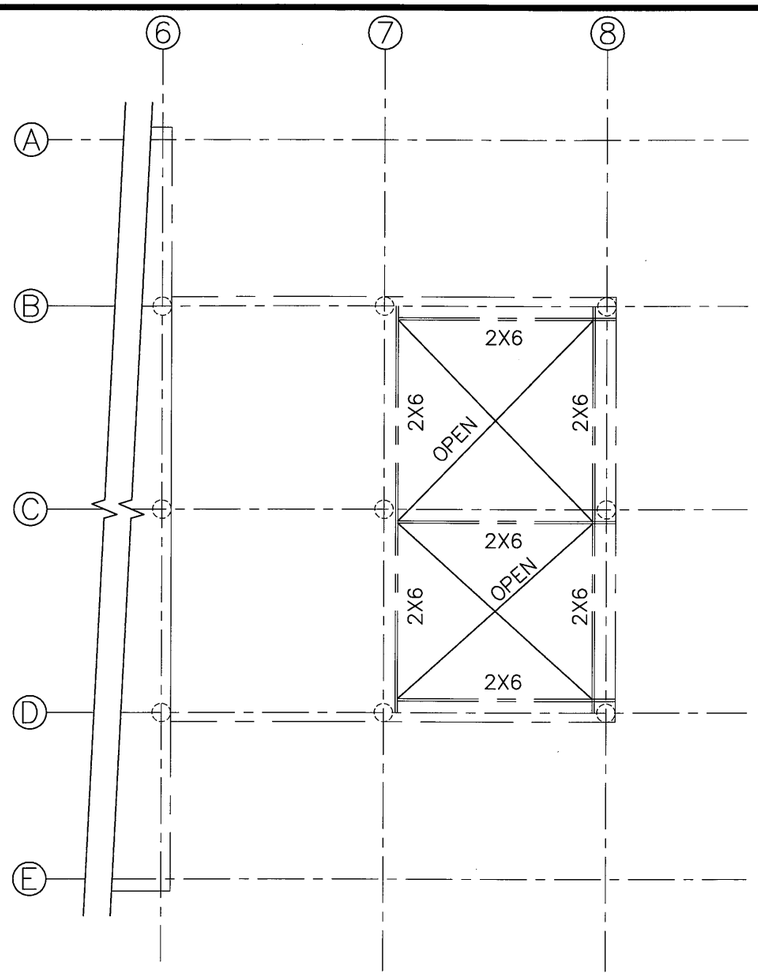
R1.3

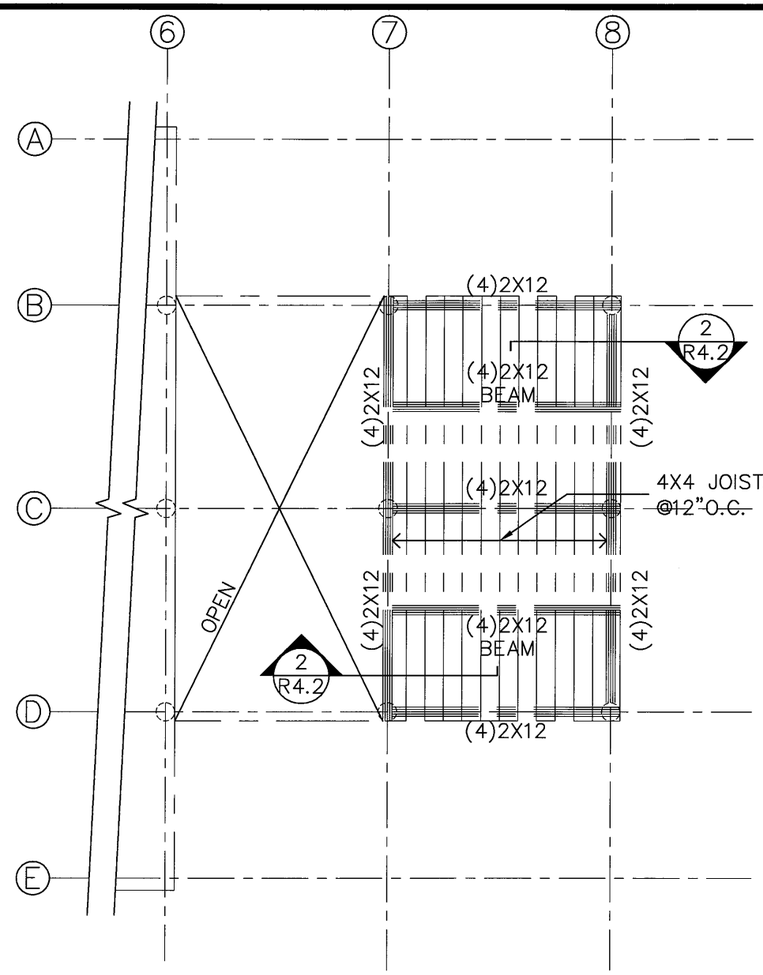


1 / R1.4 BRACING PLAN

Scale: 1/8" = 1'-0"

NOTES:

1. SEE BUILDING SECTION FOR ELEVATION OF BRACING MEMBERS
2. ALL TIMBER SHALL BE PRESSURE TREATED



2 / R1.4 MACHINERY FLOOR FRAMING PLAN

Scale: 1/8" = 1'-0"

NOTES:

1. SEE BUILDING SECTION FOR ELEVATION OF FLOOR DECK
2. ALL TIMBER SHALL BE PRESSURE TREATED
3. FLOOR DECK SHALL BE ¾" MARINE GRADE T&G PLYWOOD SHEATHING ATTACHED TO JOISTS @6"O.C. #8 GALVANIZED SCREWS

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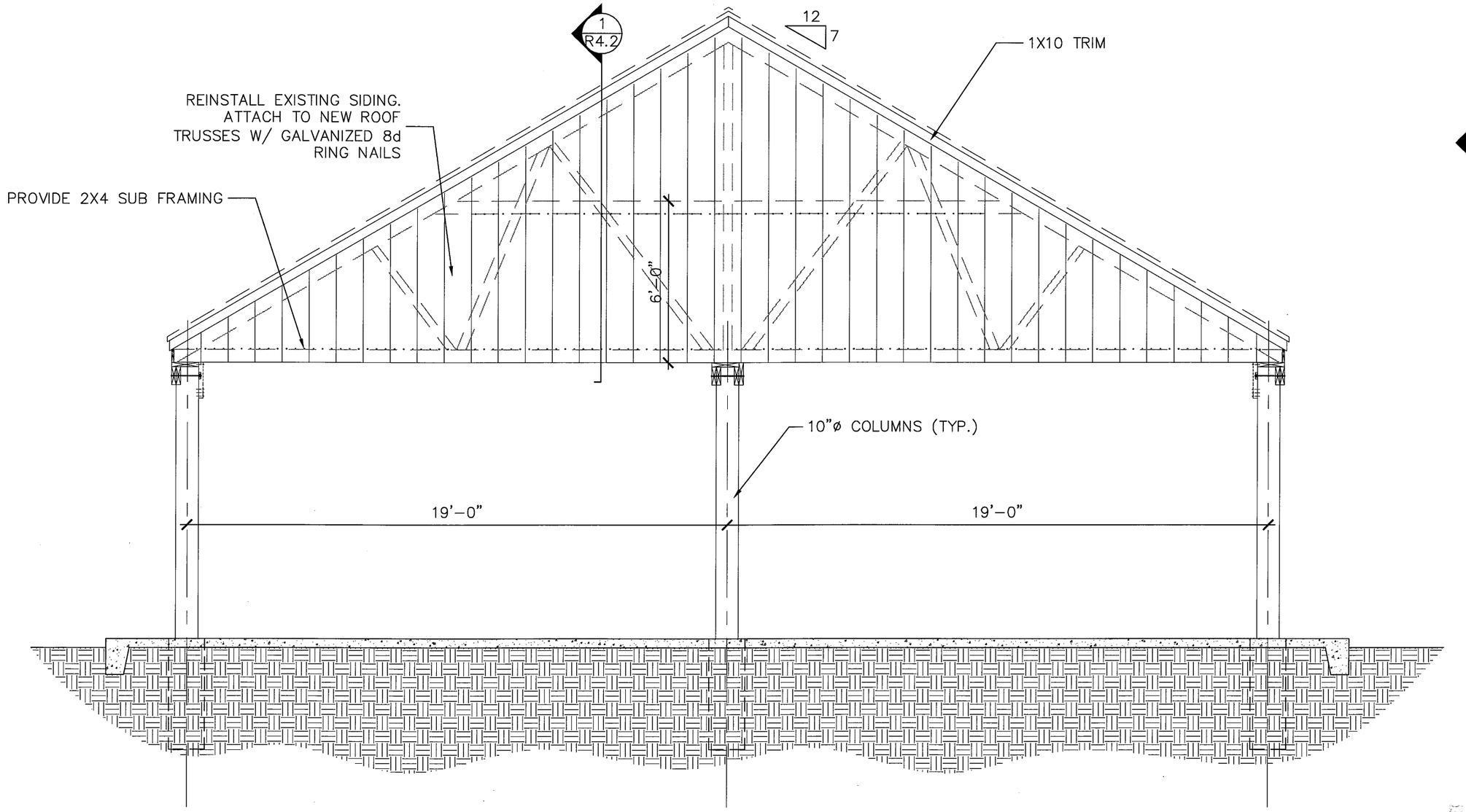
KING FARM HAY BARN REHABILITATION FOR STRUCTURAL UPGRADE
Drawing Title:
MACHINERY FLOOR FRAMING & BRACING PLAN
Date: AUGUST 27, 2006 Scale: As Noted

R1.4



A
R2.0
EAST ELEVATION
Scale: 1/4" = 1'-0"

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Drawing Title:
EAST ELEVATION
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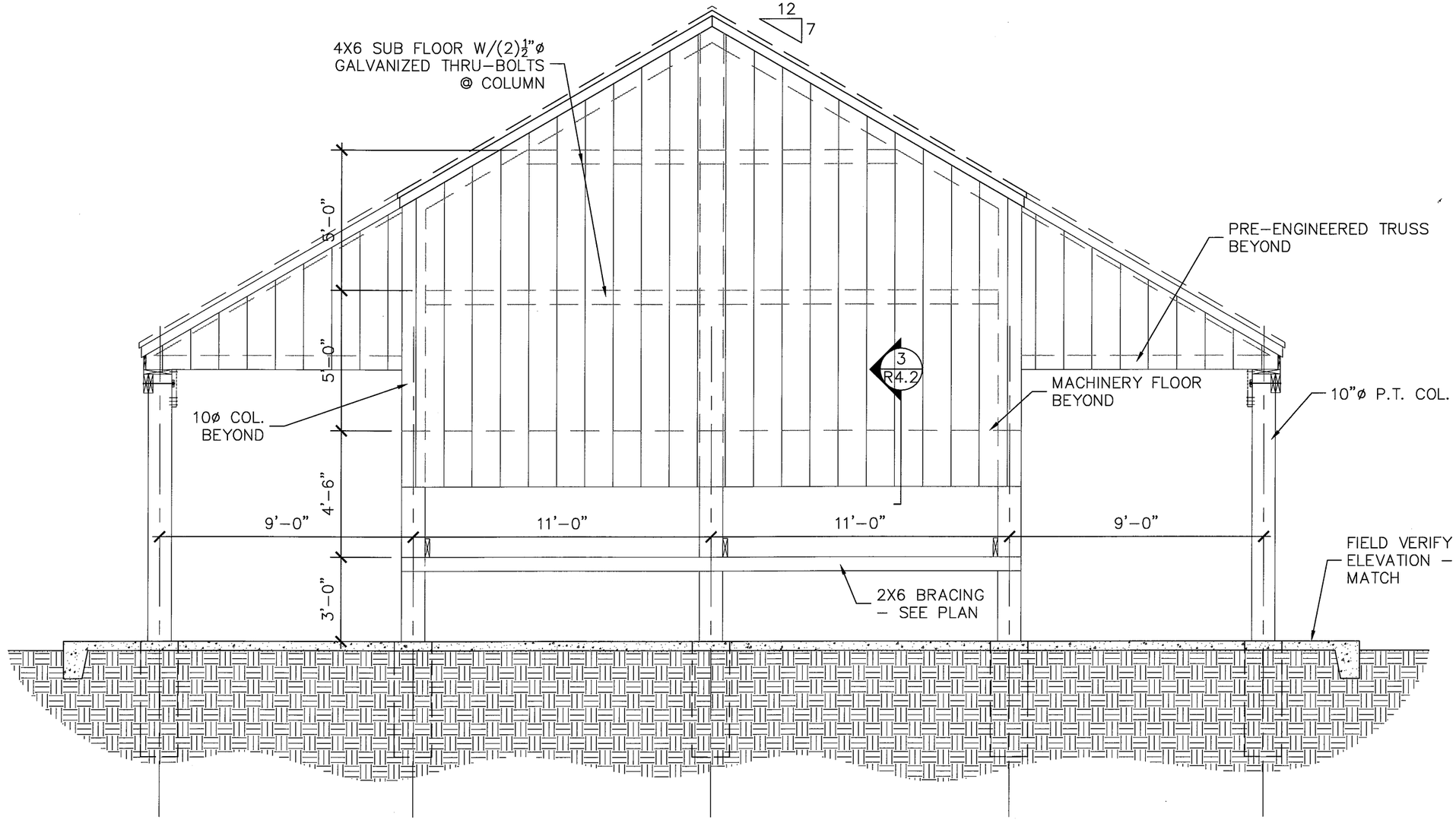
Scale: As Noted

R2.0



B / R2.1 WEST ELEVATION

Scale: 1/4" = 1'-0"

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Drawing Title:
WEST ELEVATION
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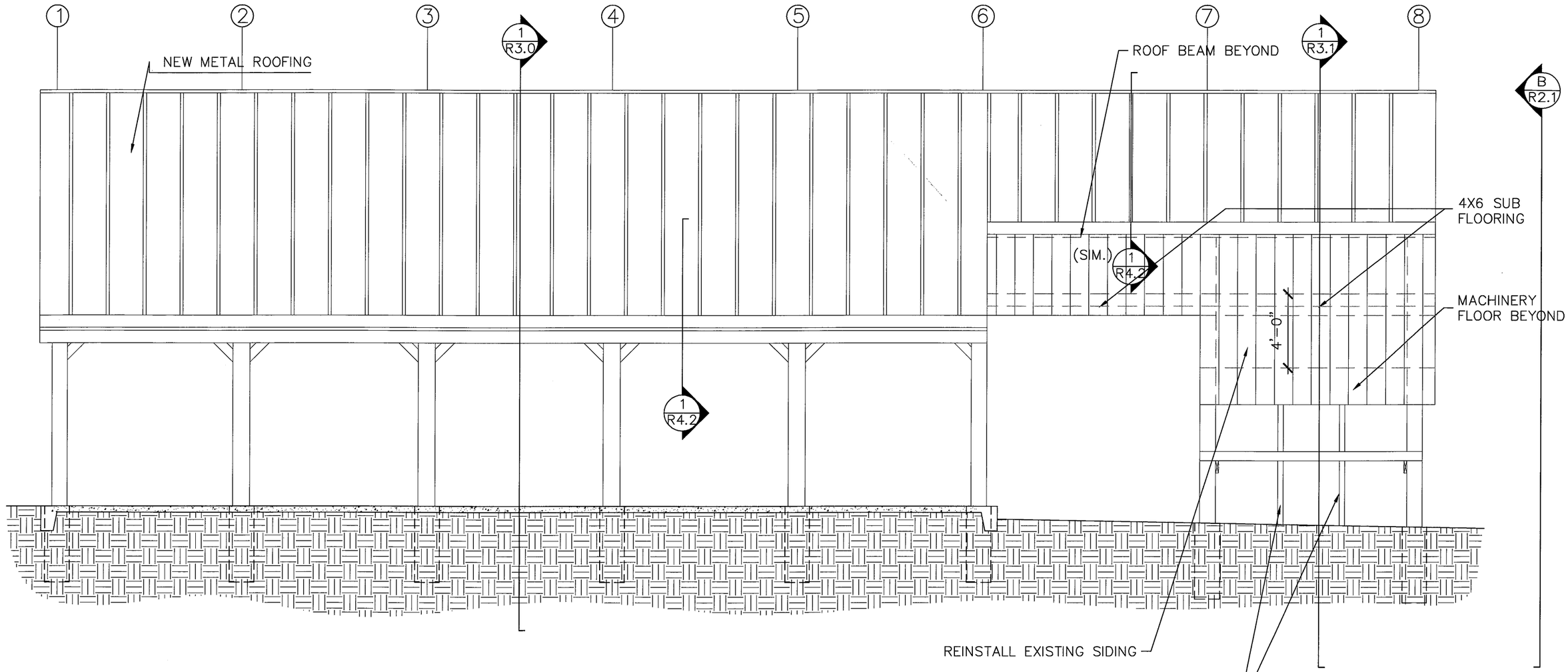
Scale: As Noted

R2.1



C
R2.2

NORTH ELEVATION

Scale: 3/16" = 1'-0"

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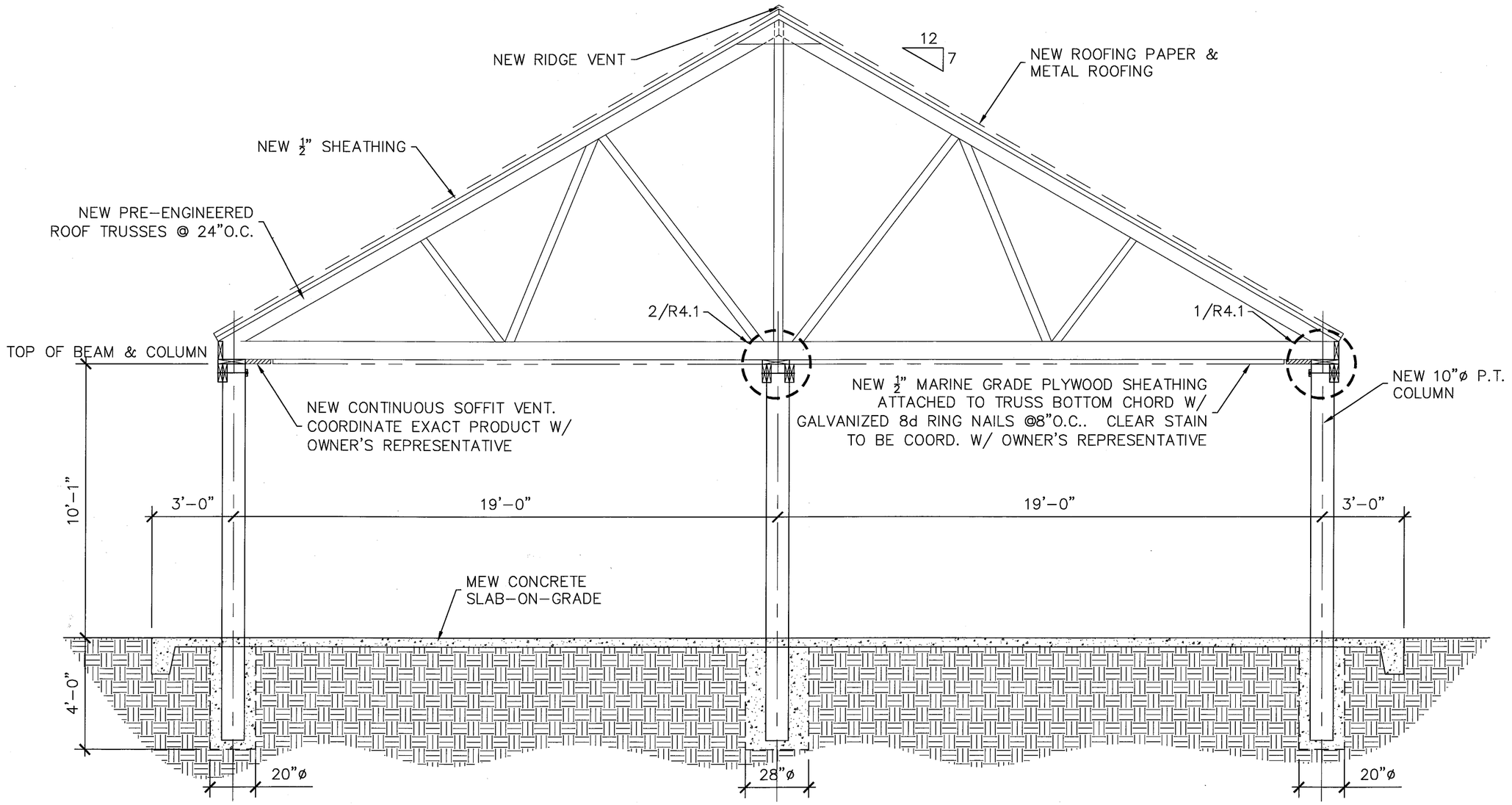
Drawing Title:
NORTH ELEVATION
Date: AUGUST 27, 2006 Scale: As Noted

R2.2



1 / R3.0 BUILDING SECTION A–A

Scale: 1/4" = 1'–0"

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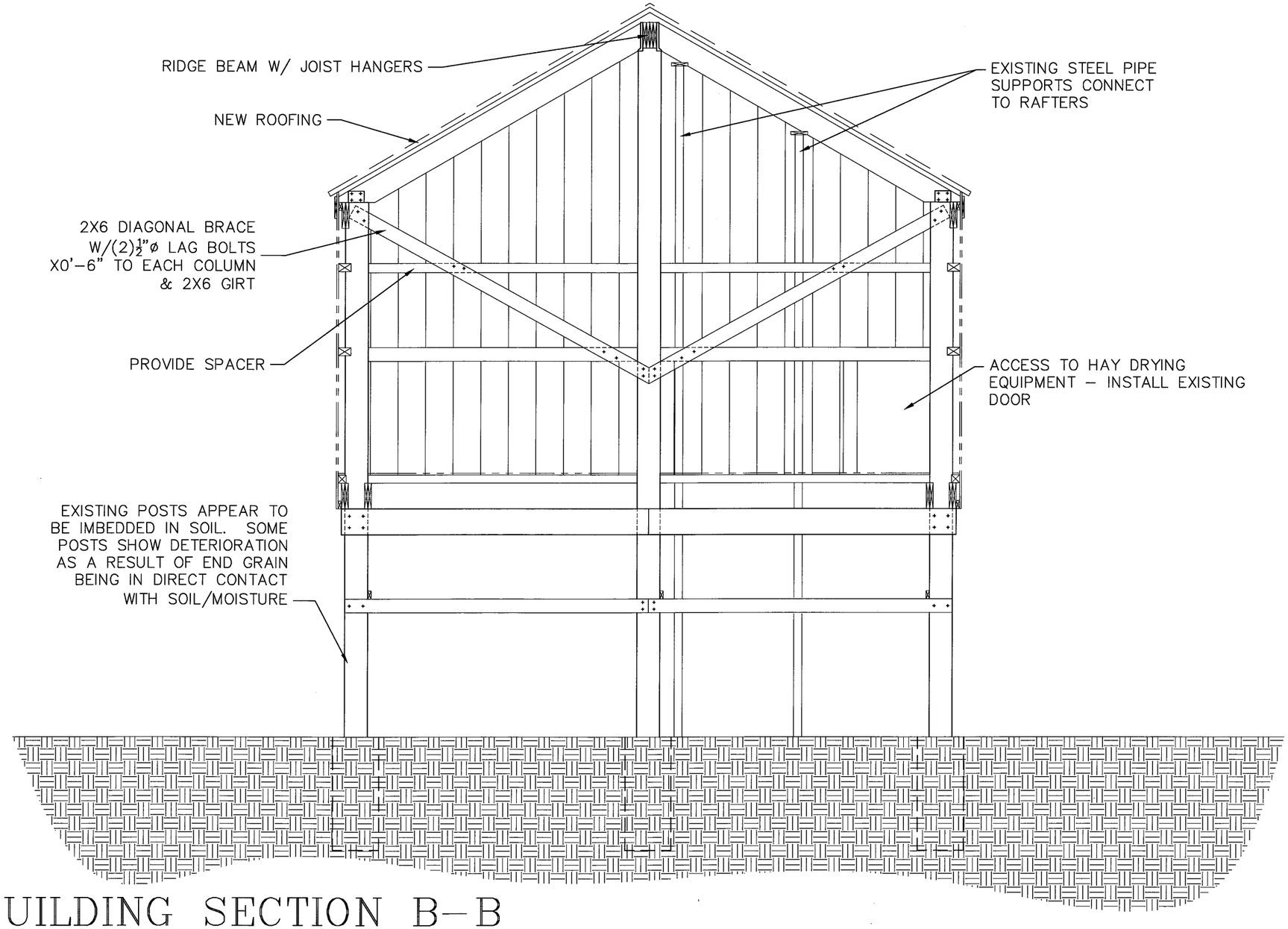
BUILDING SECTION A-A
Date: AUGUST 27, 2006 Scale: As Noted

R3.0



1 / R3.1 BUILDING SECTION B–B

Scale: 1/4" = 1'–0"

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BUILDING SECTION B-B
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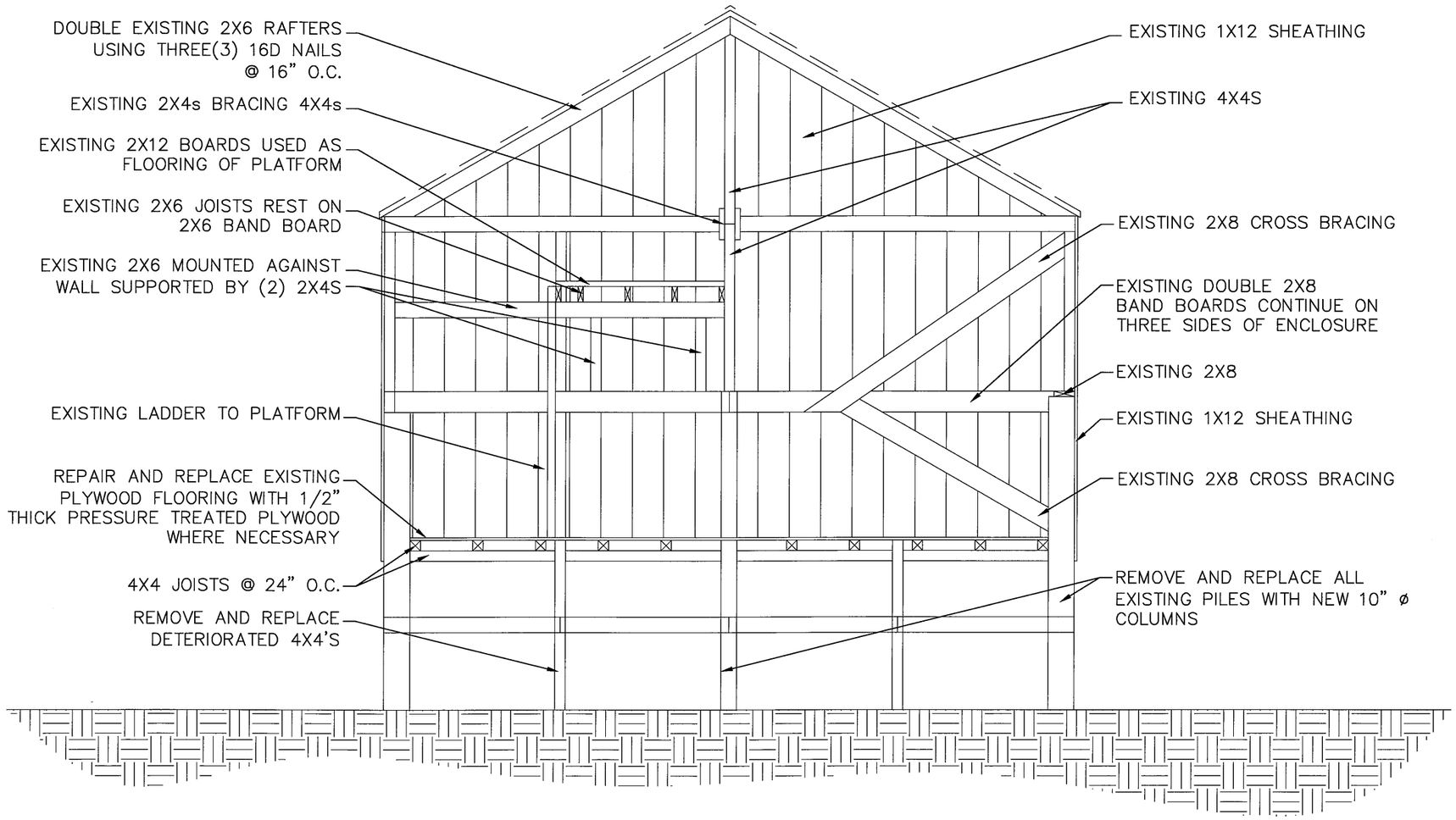
R3.1



1/R3.2 BUILDING SECTION C-C

Scale: 1/4" = 1'-0"

NOTE:
1. THIS PORTION OF THE BUILDING WILL NOT BE OCCUPIED OR UTILIZED, THEREFORE NO INTERNAL LIVE LOADS WERE APPLIED AS PART OF THE DESIGN.
2. REMOVE AND REPLACE ALL DETERIORATED WOOD MEMBERS IN KIND.
3. THE CONTRACTOR IS TO FIELD VERIFY THAT ALL EXISTING CONNECTIONS ARE IN SOUND CONDITION AND NOTIFY ENGINEER IF DETERIORATION EXISTS.

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BUILDING SECTION C-C
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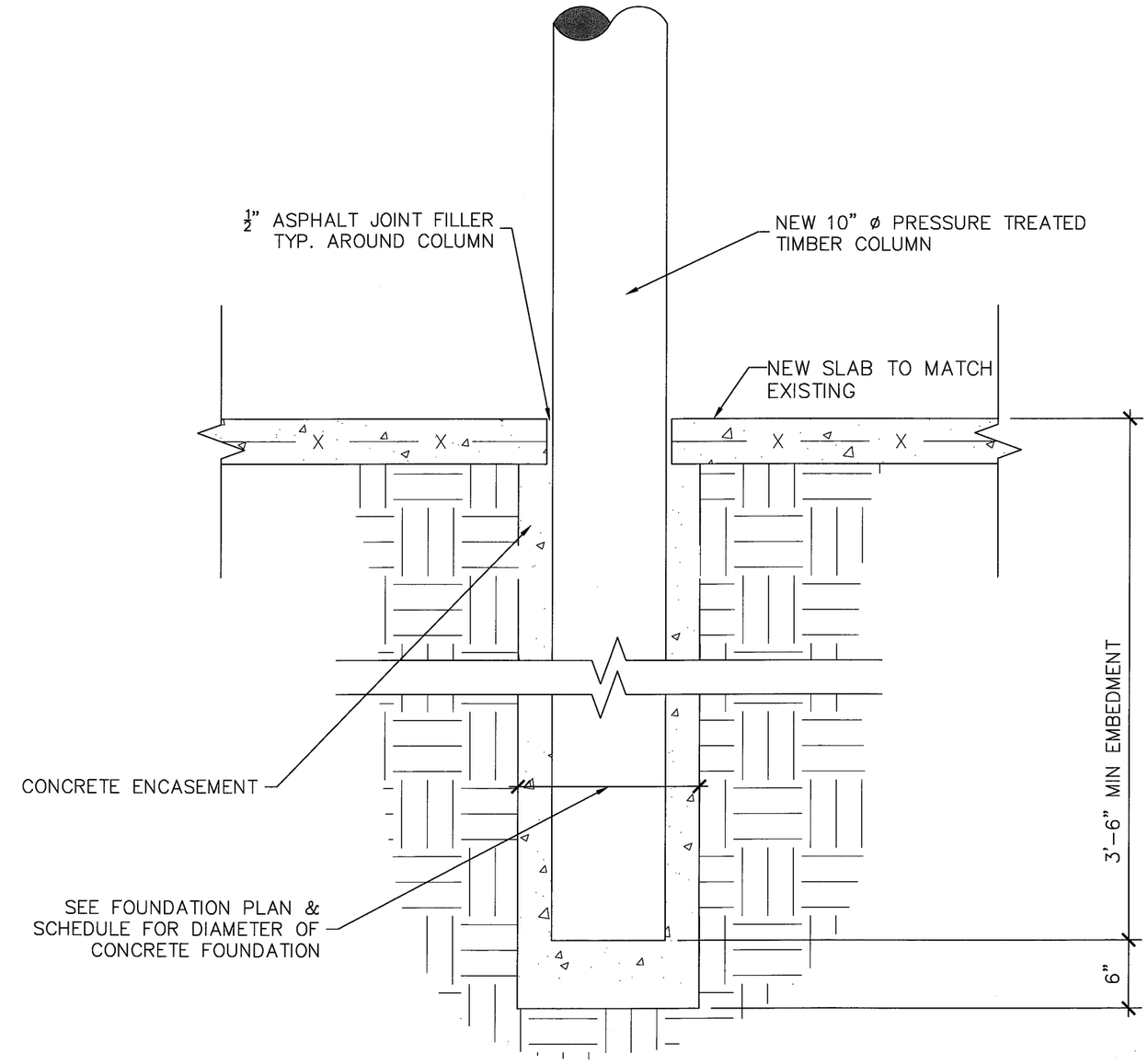
R3.2



1 / R4.0 EMBEDDED COLUMN DETAIL

Scale: 1" = 1'-0"

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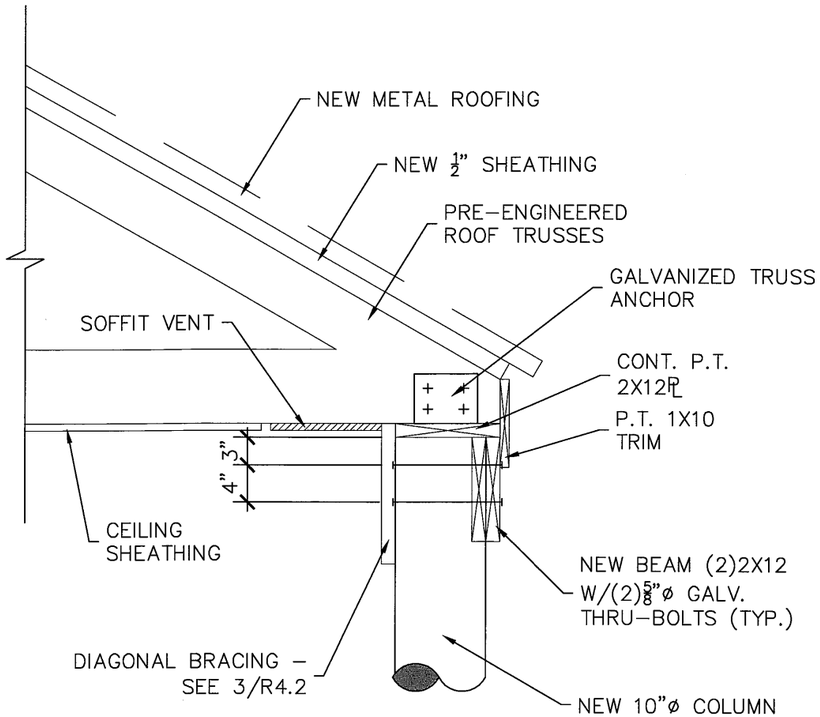
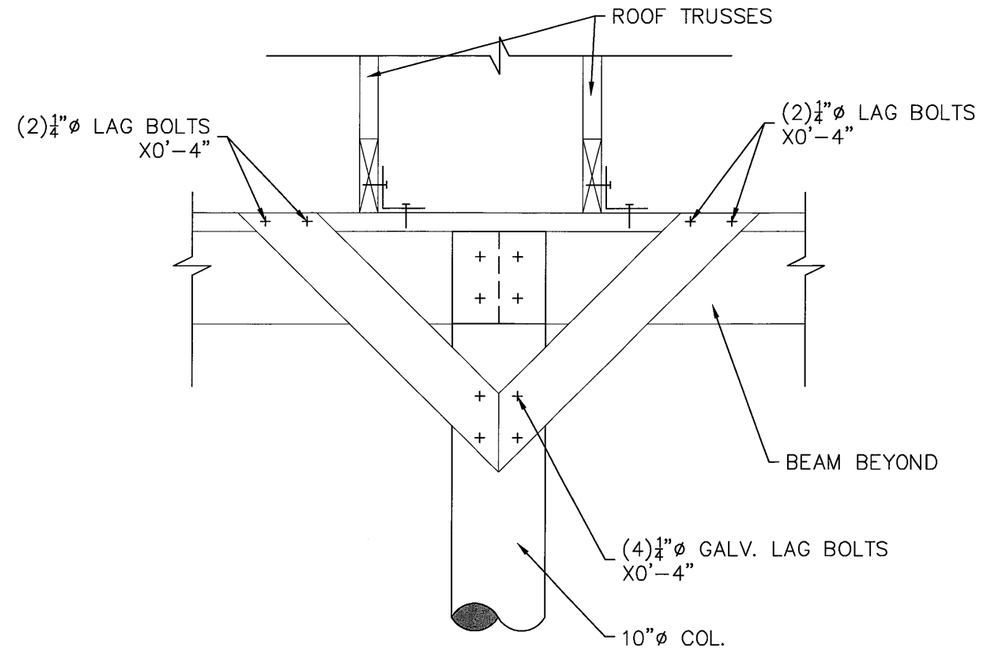
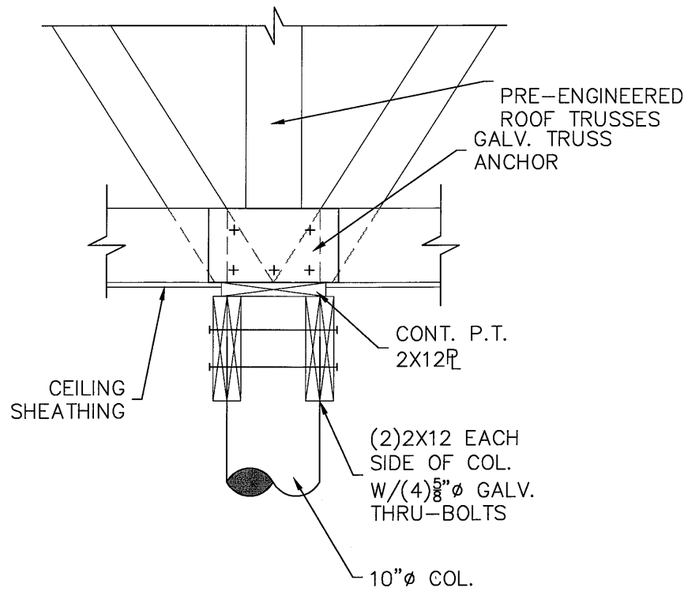
R4.0



1 / R4.1 SECTION
Scale: 3/4" = 1'–0"



3 / R4.1 BRACING DETAIL
Scale: 3/4" = 1'–0"



2 / R4.1 SECTION
Scale: 3/4" = 1'–0"

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FRAMING DETAILS
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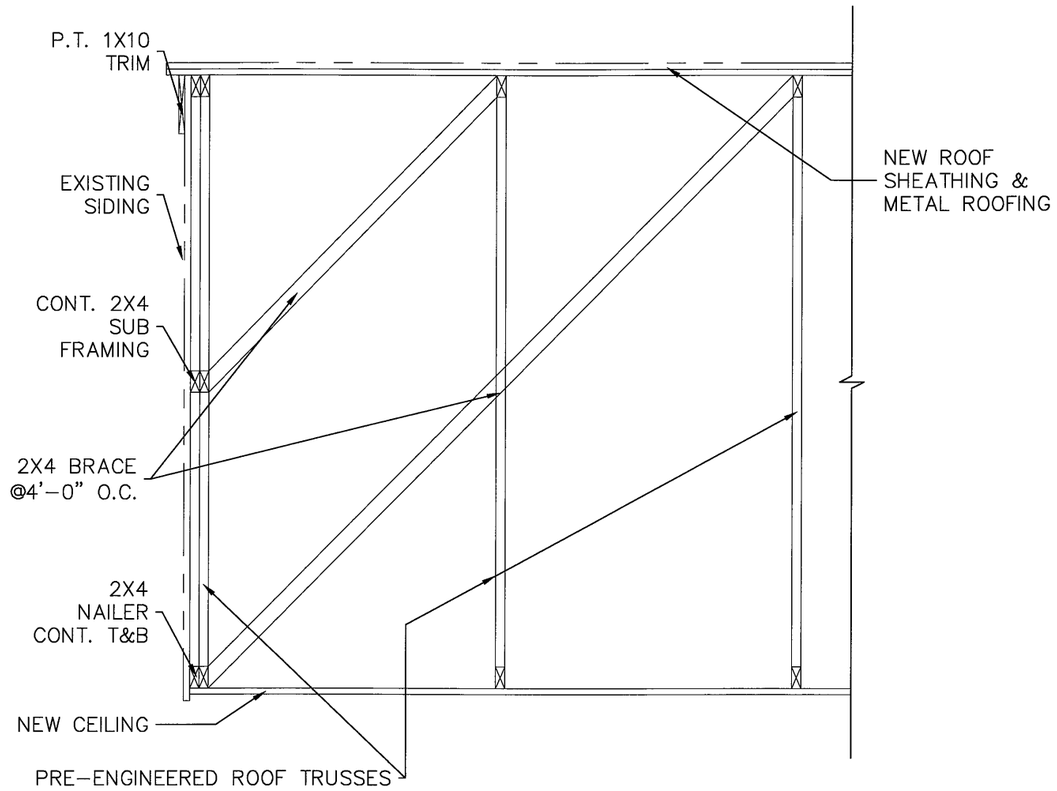
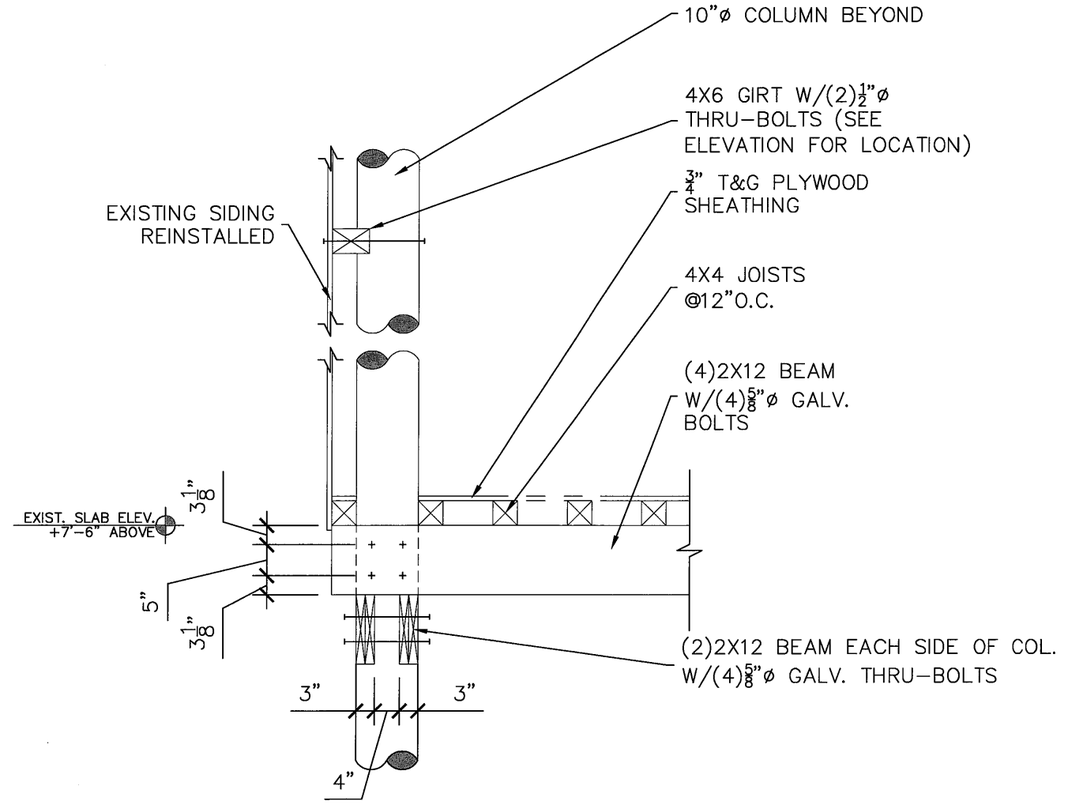
R4.2



1 / R4.2 SECTION
Scale: 1/2" = 1'-0"



2 / R4.2 SECTION
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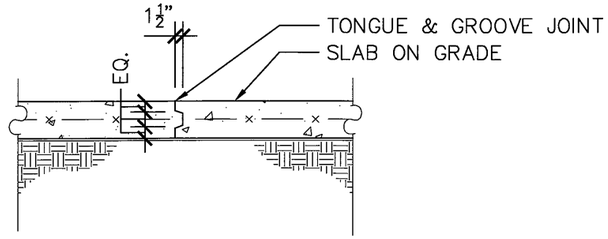
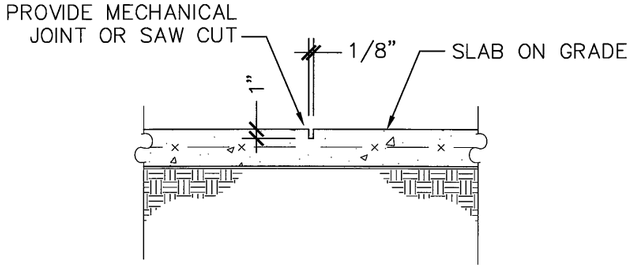
R4.2



1 / R5.0

TYP. SLAB ON GRADE CONSTRUCTION JOINT DETAIL

Scale: 3/4" = 1'-0"



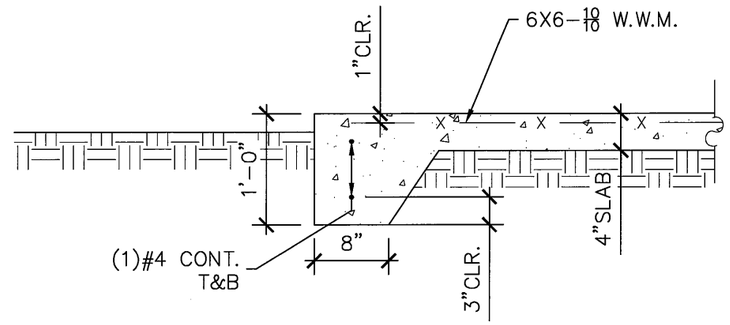
NOTES:

1. PROVIDE CONTROL JOINT @ 15'-0" O.C. MAX.
2. CUT JOINTS WITHIN 4 HRS OF FINISHING

2 / R5.0

TYP. SLAB ON GRADE CONTROL JOINT DETAIL

Scale: 3/4" = 1'-0"



3 / R4.2

TYP. SLAB ON GRADE TURNDOWN

Scale: 3/4" = 1'-0"

SDG# D06046.00

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Project:
KING FARM HAY BARN REHABILITATION FOR STRUCTURAL UPGRADE
Drawing Title:
TYPICAL DETAILS
Date: AUGUST 27, 2006
Scale: As Noted

R5.0